Amendments to the Specification

Please amend the paragraph beginning on page 39, line 1 as follows:

Based on the engine torque M_e that is given as a control target and the most recent estimated values for M_k and M_F, the equations (1) and (2) are continuously recalculated in the observer, wherein stored values can be used for the unknown quantities. Several different initialization measures are proposed to provide plausible starting values for the estimated quantities $M_k(R)$, $M_F(R)$ and $n_m(R)$ at the time when the control device is switched on. In principle, the estimates could be initialized with start values of zero, if the relatively long convergence phase until the observer has reached a sufficient approximation are of no concern. Preferably, the following values can be used for the initialization:

$$n_m(R) = n_m \quad \text{and} \quad n_F(R) = n_F$$

The estimate of $M_k(R)$ can advantageously be initialized as follows:

- by using the current engine torque M_e as the starting value for $M_k(R)$;
- if the clutch is in a slipping condition, by using the current clutch position as a basis for estimating a starting value for $M\cancel{k}_{\underline{k}}(R)$;
- by using the estimated value for $M_k(R)$ that was last stored (e.g., in an EEPROM) in the previous operating phase.

The estimate of $M_F(R)$ can advantageously be initialized:

- by estimating the starting value based on the current wheel rpm-rate;
- by starting with the estimated value for $M_F(R)$ that was last stored (e.g., in an EEPROM) in the previous operating phase.

Please amend the paragraph beginning on page 42, line 14 as follows:

In a further preferred embodiment of a power train observer according to Figure 3b ~~301~~, the movement-opposing torque $M_F(R)$ is split up into different components:

$$M_F = M_{nom} + M_{slope} + M_{brake}.$$

The portion M_{nom}, as a rule, is known for a given vehicle. It represents the nominal travel resistance on a plane surface in the absence of a headwind or tailwind. To handle this nominal operating state, a transmission control system typically has a first array of characteristic shift data for the selection of the appropriate gear. However, a control characteristic designed for traveling on a level pavement is not suitable for uphill or downhill travel. It is therefore recommended to use an overall travel-opposing torque M_F that also includes the deviation from the nominal torque. According to the foregoing equation, the deviation from the nominal torque is represented by the sum of the braking torque M_{brake} and the torque M_{slope} caused by the gravity component in the direction of the slope angle. As a matter of principle, the components M_{brake} and M_{slope} cannot be observed independently of each other without additional sensors. In some vehicle types, the torque M_{brake} could be estimated from the sensor signal of existing brake pressure sensors, but the majority of current vehicles are equipped only with a brake light switch providing a signal B that is processed in the corrector block 350. In this case, the following procedure can be used:

Please amend the paragraph beginning on page 40, line 6 as follows:

After the initialization, the program runs in a cycle that can be based on a given clock frequency. In the node 331, the torque difference that accelerates the engine is calculated in each cycle from the effective engine torque M_e and the estimated value $M_k(R)$. The result is passed on to block 302, where an estimate of the engine rpm-gradient $d\cancel{n_M}\underline{n_m}(R)/dt$ is calculated by taking the effective mass moment of inertia of the engine into account. At the node 310, the estimate for the engine rpm-gradient $d\cancel{n_M}\underline{n_m}(R)/dt$ is corrected with a correction value $d\cancel{n_M}\underline{n_m}(R')/dt$. The result from node 310 is integrated in block 308. The result of the integration represents an estimated engine rpm-rate $\cancel{n_M}\underline{n_m}(R)$, which is compared to the measured engine rpm-rate $\cancel{n_M}\underline{n_m}$ in the program node 304 to determine an error signal e_M.

Please amend the paragraph beginning on page 41, line 13 as follows:

The error signals e_M, e_F are used to continuously update and correct the estimated values of the observer. In the illustrated embodiment of Figure 3b, this function is performed by four corrector blocks L1, L2, 350, and L3, each of which has an input for e_M and an input for e_F. Each corrector block amplifies and applies weights to the error signals in relation to each other. Block L1 combines the error signals into a correction value $d\text{-}\cancel{n_M}\underline{n_m}(R')/dt$ that is fed back directly to the node 310, and Block L3 combines the error signals into a correction value $dn_F(R')/dt$ that is fed back directly to the node 320. This serves to stabilize the observer overall, in order to prevent oscillations of the control loop. The output quantity from block L2 is integrated in block 330 to establish an estimate $M_k(R)$ of the transmitted clutch torque. Preferably, the values of the parameters

used in the blocks L1, L2, L3 are selectable based on certain operating conditions, e.g., the currently engaged gear, the actuation of the gas pedal or brake pedal, the travel speed, and similar factors.